

WHAT IS CLAIMED IS:

1. A signal processing apparatus which can output a chroma signal of m bits as a chroma signal of n bits by an output apparatus, comprising:

5 gamma converting means for gamma converting the chroma signal of m bits into a chroma signal of k bits;

color converting means for converting the chroma signal of k bits obtained by said gamma converting means into a signal of k bits showing a brightness and a color tone; and

10 bit converting means for converting the signal of k bits showing the brightness and color tone obtained by said color converting means into a signal of n bits showing a brightness and a color tone,

15 wherein $m > n = k + 1$.

2. An apparatus according to claim 1, wherein said color converting means converts the chroma signal into color difference signals (Cr, Cb).

20 3. An apparatus according to claim 2, wherein said bit converting means linearly converts a signal at a predetermined input level or lower in the color difference signals (Cr, Cb) of k bits obtained by said color converting means into color difference signals (Cr, Cb) of n bits and non-linearly converts a signal at the predetermined input level or higher into the

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color difference signals (Cr, Cb) of n bits.

4. An apparatus according to claim 1, wherein
said color converting means converts the chroma signal
5 into chromaticity signals (U, V).

5. An apparatus according to claim 4, wherein
said bit converting means omits one upper bit in the
chromaticity signals (U, V) of k bits and outputs n
10 lower bits.

6. A signal processing method which can output a
chroma signal of m bits as a chroma signal of n bits by
an output apparatus, comprising:

15 a gamma converting step of gamma converting the
chroma signal of m bits into a chroma signal of k bits;

a color converting step of converting the chroma
signal of k bits obtained in said gamma converting step
into a signal of k bits showing a brightness and a
20 color tone; and

a bit converting step of converting the signal of
k bits showing the brightness and color tone obtained
in said color converting step into a signal of n bits
showing a brightness and a color tone,

25 wherein $m > n = k + 1$.

7. A method according to claim 6, wherein the

chroma signal is converted into color difference signals (Cr, Cb) in said color converting step.

5 8. A method according to claim 7, wherein in said bit converting step, a signal at a predetermined input level or lower in the color difference signals (Cr, Cb) of k bits obtained in said color converting step is linearly converted into color difference signals (Cr, Cb) of n bits and a signal at the predetermined input level or higher is non-linearly converted into the color difference signals (Cr, Cb) of n bits.

15 9. A method according to claim 6, wherein the chroma signal is converted into chromaticity signals (U, V) in said color converting step.

20 10. A method according to claim 9, wherein in said bit converting step, one upper bit in the chromaticity signals (U, V) of k bits is omitted and n lower bits are outputted.